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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,046	07/14/2003	Seung-Jae Han	4-4	6070

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CAPITOL PATENT & TRADEMARK LAW FIRM, PLLC
ATTN: JOHN CURTIN
P.O. BOX 1995
VIENNA, VA 22183

EXAMINER

NGUYEN, KHAI MINH

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,046

Applicant(s)

HAN ET AL.

Examiner

Khai M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 8, 11-14, 16, 18, 19, 22-27, 29, 31, 32, 35 and 36 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 9, 10, 15, 17, 20, 21, 28, 30, 33 and 34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/1/2006 have been fully considered but they are not persuasive.

Regarding claims 1-3, 5, 7-8, 11-14, 16, 18-19, 22-23, 25, 27, 29, 31-32 and 35, Applicant argues, on pages 11-13 of the remarks, that Brody and Lo do not disclose, teach, or suggest "calculating a second balancing metric based on an operating characteristic of said second layer; and adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric".

The Examiner respectfully disagrees with Applicant's argument because Brody and Lo clearly discloses calculating a second balancing metric based on an operating characteristic of said second layer (see Brody, fig.3-4, col.11, lines 14-55, instantaneous cell loading is periodically monitored and balance loading among the various cells in system, and predetermined threshold value DHTHRESH and DRTHRESH are assigned to each cell in system, (a network can have more than one base stations, and each or the cell site base stations defines a geographical cell (layer)); and adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric (see Lo, fig.1, col.1, lines 39-57, col.3, A threshold for allowing a call entering into the system is adaptively adjusted according to system condition so that the calls are sustained in a predetermined quality.

Furthermore, in allocating channels, the loads of the macro cell and micro cells are balanced so that the system has a higher channel utility.)

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 7-8, 11-14, 16, 18-19, 22-27, 29, 31-32, and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brody et al. (U.S.Pat-4670899) in view of Lo et al. (U.S.Pat-6792275).

Regarding claim 1, Brody teaches a method for calculating a transmission characteristic threshold for use in assigning a user to one layer in a plurality of layers in a wireless communications network (fig.1-2, abstract), said method comprising:

calculating a first balancing metric based on an operating characteristic of said first layer (fig.3-5b, col.7, lines 4-24, col.11, lines 14-55),

calculating a second balancing metric based on an operating characteristic of said second layer (fig.3-5b, col.7, lines 4-24, col.11, lines 14-55).

Brody fails to specifically disclose adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric. However, Lo teaches adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric (fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8). Therefore, it

would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of Lo to Brody to provide balance the channel utility between the micro cell and macro cell.

Regarding claim 2, Brody and Lo further teaches the method of claim 1 further comprising the step of assigning said user to a layer in response to the value of a first user transmission characteristic of a transmission from said user relative to said adjusted transmission characteristic threshold (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 3, Brody and Lo further teaches the method of claim 1 wherein said transmission characteristic threshold is a threshold corresponding to the size of the data to be transmitted to or from said user (see Lo, fig.1, line 61 to col.4, line 8).

Regarding claim 5, Brody and Lo further teaches the method of claim 1 wherein said transmission characteristic threshold is a threshold corresponding to the velocity of said user (see Brody, col.6, lines 43-56, col.7, lines 4-24).

Regarding claim 7, Brody and Lo further teaches the method of claim 1 wherein said first operating characteristic corresponds to an average number of users (see Brody, fig.13, col.24, lines 6-28, col.25, line 50 to col.26, line 7).

Regarding claim 8, Brody and Lo further teaches the method of claim 1 wherein said first operating characteristic corresponds to the expected system load as seen by said user (see Brody, col.7, lines 4-41).

Regarding claim 11, Brody and Lo further teaches the method of claim 8 wherein said first balancing metric is determined by calculating the number of users in the first

layer of said network and said second balancing metric is determined by calculating the number of users in said second layer of said network (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 12, Brody teaches apparatus for calculating a transmission characteristic threshold for use in assigning a user to one layer in a plurality of layers in a wireless communications network (fig.1-2, abstract), said apparatus comprising:

means for calculating a first balancing metric based on an operating characteristic of said first layer (fig.3-5b, col.7, lines 4-24, col.11, lines 14-55);

means for calculating a second balancing metric based on an operating characteristic of said second layer (fig.3-5b, col.7, lines 4-24, col.11, lines 14-55); and

Brody fails to specifically disclose adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric. However, Lo teaches adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric (fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of Lo to Brody to provide balance the channel utility between the micro cell and macro cell.

Regarding claim 13, Brody and Lo further teaches the apparatus of claim 12 further comprising means for assigning said user to a layer in response to the value of a first user transmission characteristic of a transmission from said user relative to said adjusted transmission characteristic threshold (see Lo, fig.1, col.1, lines 39-57, col.3,

line 61 to col.4, line 8).

Regarding claim 14, Brody and Lo further teaches the apparatus of claim 12 wherein said transmission characteristic threshold is a threshold corresponding to the size of the data to be transmitted to or from said user (see Lo, fig.1, col.3, line 61 to col.4, line 8).

Regarding claim 16, Brody and Lo further teaches the apparatus of claim 12 wherein said transmission characteristic threshold is a threshold corresponding to the velocity of said user (see Brody, col.6, lines 43-56, col.7, lines 4-24).

Regarding claim 18, Brody and Lo further teaches the apparatus of claim 12 wherein said first operating characteristic corresponds to an average number of users (see Brody, fig.13, col.24, lines 6-28, col.25, line 50 to col.26, line 7).

Regarding claim 19, Brody and Lo further teaches the apparatus of claim 12 wherein said first operating characteristic corresponds to the expected system load as seen by said user (see Brody, col.7, lines 4-41).

Regarding claim 22, Brody and Lo further teaches the apparatus of claim 18 wherein said first balancing metric is determined by calculating the number of users in the first layer of said network and said second balancing metric is determined by calculating the number of users in said second layer of said network (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 23, Brody teaches an assignment manager for assigning a user to one layer in a plurality of layers in a wireless communications network (fig.1-2, abstract), said assignment manager (fig.1-2, element 20) comprising:

a first circuit for calculating a first balancing metric based on an operating characteristic of said first layer (fig.3-5b, col.7, lines 4-24, col.11, lines 14-55);

a second circuit for calculating a second balancing metric based on an operating characteristic of said second layer (fig.3-5b, col.7, lines 4-24, col.11, lines 14-55); and Brody fails to specifically disclose a third circuit for adjusting a transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric. However, Lo teaches a third circuit for adjusting a transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric (fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of Lo to Brody to provide balance the channel utility between the micro cell and macro cell.

Regarding claims 24, 26, and 36, Brody and Lo further teaches the assignment of claim 23 wherein said first circuit, said second circuit, said third circuit and said fourth circuit are the same circuit (see Lo, fig.1, col.2, lines 16-53).

Regarding claim 25, Brody and Lo further teaches the assignment manager of claim 23 further comprising a fourth circuit for assigning said user to a layer in response to the value of a first user transmission characteristic of a transmission from said user relative to said adjusted transmission characteristic threshold (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 27, Brody and Lo further teaches the assignment manager of claim 23 wherein said transmission characteristic threshold is a threshold corresponding

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to the size of the data to be transmitted to or from said user (see Lo, fig.1, col.3, line 61 to col.4, line 8).

Regarding claim 29, Brody and Lo further teaches the assignment manager of claim 23 wherein said transmission characteristic threshold is a threshold corresponding to the velocity of said user (see Brody, col.6, lines 43-56, col.7, lines 4-24).

Regarding claim 31, Brody and Lo further teaches the assignment manager of claim 23 wherein said first operating characteristic corresponds to an average number of users (see Brody, fig.13, col.24, lines 6-28, col.25, line 50 to col.26, line 7).

Regarding claim 32, Brody and Lo further teaches the assignment manager of claim 23 wherein said first operating characteristic corresponds to the expected system load as seen by said user (see Brody, col.7, lines 4-41).

Regarding claim 35, Brody and Lo further teaches the assignment manager of claim 32 wherein said first balancing metric is determined by calculating the number of users in the first layer of said network and said second balancing metric is determined by calculating the number of users in said second layer of said network (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Allowable Subject Matter

3. Claims 4, 6, 9-10, 15, 17, 20-21, 28, 30, and 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571.272.7923. The examiner can normally be reached on 8:00-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571.272.7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Khai Nguyen
Au: 2617

9/27/2006


GEORGE ENG
SUPERVISORY PATENT EXAMINER